ADVERTISEMENT

JOHN WEISS & [illegible]

A NEW SCOTOMETER

By COL. R. H. ELLIOT, I.M.S.

PARTICULARS ON APPLICATION

SOLE MAKERS—

JOHN WEISS & SON, LTD.

287, Oxford Street, London, W. 1.

Instrument Makers to the Royal London Ophthalmic Hospital (Moorfields) and to the principal British and Colonial Hospitals

CONTRACTORS TO H.M. GOVERNMENT

Special Orders and Repairs executed with promptitude.

THE BRITISH JOURNAL
OF
OPHTHALMOLOGY
MAY, 1919

COMMUNICATIONS

CHANGES IN THE SELLA TURCICA IN FAMILY OPTIC ATROPHY*

BY
JAMES TAYLOR, M.A., M.D., F.R.C.P.,
PHYSICIAN TO THE NATIONAL HOSPITAL, QUEEN SQUARE, AND TO MOORFIELDS EYE HOSPITAL.

IN the *Ophthalmoscope* for August, 1916, appeared a paper by Mr. J. Herbert Fisher on "Leber's Disease (Hereditary Optic Atrophy): a suggestion as to its cause." It was pointed out that Leber in his original paper, published in 1871, had noted the occurrence of familial optic atrophy in patients who were the subjects of various nervous symptoms, such as headache, vertigo, tremors, and even epileptic attacks; that the optic atrophy was not infrequently preceded by some degree of optic neuritis, and that while central scotoma for colour and failure of central vision were characteristic, contraction of visual fields was rare. The explanation of Leber's atrophy as a result of retro-bulbar neuritis, it was pointed out by Mr. Fisher, was difficult to maintain in the face of certain facts such as the remarkably symmetrical fields in Mr. Simeon Snell's

*Read before Section of Ophthalmology, Royal Society of Medicine, Feb. 5, 1919.

case which has been accepted as a case of Leber's disease. It is not easy to imagine, as Mr. Fisher remarks, an hereditary tendency to the isolated implication "of the optic nerve fibres by inflammatory processes close behind the eyeballs, and a special vulnerability of the papillo-macular fibres, with a tendency to synchronous onset in the two eyes at special epochs of life."

Nettleship in 1907* wrote a paper, "Central Amblyopia as a Symptom in Tumour of the Chiasma," and since then, as Fisher

FIG. 1.—Robert C——— since 1917.

remarks, it has been noted that loss of the temporal field in chiasmal cases frequently starts as a central scotoma expanding to the outer periphery. Fisher's suggestion is that the condition known as Leber's atrophy is dependent upon some abnormal condition of the pituitary, and he points out in support of this the recognised neuropathic states occurring with Leber's disease, the occasional presence of vertigo, headache, or even epilepsy, and the fact that both in cases of Leber's atrophy and in undoubted cases of pituitary tumour, subjective phenomena of light and colour have been described. He also points out the well recognized intimate association of the pituitary with sexual functions, and states that the onset of Leber's atrophy is most likely to occur either at the

*_Trans. Ophthal. Soc._ U.K., Vol. XVII, p. 277.

time of sexual development or with the commencement of sexual decay.

Some years ago Dr. Gordon Holmes and I published* observations on several cases of hereditary optic atrophy in a very remarkable family, the family C. Recently another member of the family was referred to me at Moorfields by Mr. Percy Flemming. When the paper by Dr. Gordon Holmes and myself was published this man was quite well, we were told by his brother. We did not have the

FIG. 2.—Charles C——— since 1907.

opportunity of seeing him then. The history he gives bears out his brother's statement for he was quite well, he says, until October, 1917. Then at the age of 52 his vision suddenly altered, and when he was seen at Moorfields he had characteristic white discs and central scotoma for colours. He confessed to excessive smoking—4 ounces of shag a week. But what I wish particularly to draw attention to is the condition of the *sella Turcica* as revealed by X-rays (Fig. 1). It is long and shallow and the clinoid processes are certainly not normal. This X-ray photograph was taken within a few months of the onset of the affection. I was fortunately able to see again an older brother of this patient, one of the brothers whom

Trans. Ophthal. Soc. U.K., Vol. XXXIII.

Dr. Holmes and I had seen and examined in connection with the paper already alluded to, now aged 60, and an X-ray examination of his pituitary fossa revealed, as will be seen, a similar and even more extensive change, the fossa being shallow and the clinoid processes much reduced (Fig. 2). In his case the visual failure had existed for ten years at the time the skiagram was taken. A photograph of a normal sella is shown (Fig. 3).

It is of interest with reference to the remark Mr. Fisher makes

FIG. 3.—Normal Sella Turcica.

as to the curious symmetry of the fields in Simeon Snell's case, that in this patient also, whose fields we illustrated in the paper referred to, these were in some degree symmetrical. Two other points are also noticeable in the history of the ailments of different members of the family; (1) that in more than one the onset of the trouble was very rapid—almost sudden, without any premonitory symptoms, and the degree of visual failure did not increase, but remained almost what it was in the first few days, and (2) that one of the members of the family was actually under observation at the time at which optic neuritis was present, and that in his case the diagnosis at this time was that of intracranial tumour,—a diagnosis which his subsequent history showed to be almost certainly incorrect.

I have thought it worth while to publish these observations as at all events of interest in reference to Mr. Fisher's suggestion. Personally I am of opinion that they strongly support his view. There can be no doubt that in each of these cases the *sella Turcica* is abnormal. But it is obvious that much work will have to be done and many observations made especially as to the condition of the fossa in normal cases, as well as in cases of Leber's disease, before any definite conclusions can be arrived at, and it may be remarked that the published cases of Leber's atrophy, almost certainly include cases which are referable to more than one category.

INTRANASAL DACRYOCYSTOSTOMY: INTRANASAL DRAINAGE OF THE LACRYMAL SAC

A Report of 50 Consecutive Cases

BY

J. V. PATERSON, M.B., F.R.C.S. Edin.,

SURGEON, EYE DEPARTMENT, ROYAL INFIRMARY, EDINBURGH,

AND

J. S. FRASER, M.B., F.R.C.S. Edin.,

ASSISTANT SURGEON, EAR AND THROAT DEPARTMENT, ROYAL INFIRMARY, EDINBURGH.

THE effective treatment of disease of the lacrymal passages has always presented difficulties to the surgeon. This is specially true in the case of hospital patients, who very often do not come for treatment until the disease has reached an aggravated and intense form. In very many of these cases there is great dilatation of the sac with regurgitation of muco-pus on pressure, or there is tear sac abscess, the result of the spread of the septic process to the tissues round the sac.

The old treatment of dilating the tear passages by frequent probing is in nearly all cases quite ineffective.

While a fairly large probe can usually be passed into the nose, adequate drainage is not established, and little or no lasting benefit results. Attempts made to secure better drainage by the wearing of styles, or by the introduction of threads to act as drains, have been made on a fairly large scale by some surgeons. This type of treatment, however, has never been very widely adopted, partly, I think, owing to the trouble it involves, and partly to its success being very moderate.

So troublesome are these cases of dacryocystitis that most ophthalmic surgeons have welcomed and largely employed the drastic method of complete excision of the tear sac.

The operation of excision, when properly carried out, gives very good results, marks a great advance and shows a determination to treat these cases with thoroughness. The operation, however, is obviously not an ideal one, its aim being to remove the diseased tear sac and not to establish drainage into the nose and restore the function of the parts involved.

After excision of the sac a certain amount of watering of the eye nearly always exists and sometimes this watering is very troublesome. It is true that the watering is often less than before the operation, but still it is very likely to be a lifelong source of annoyance to the patient.

To minimize this difficulty, excision of the accessory tear gland has been largely practised on the Continent.

The scar left after excision is usually trivial and only occasionally unsightly. Why, then, with results relatively so good should we advocate any revision of our surgical ideas on the subject? My answer is that, in my experience, the intra-nasal operation has in Dr. Fraser's hands given results very much better than excision. Real cure of the condition with complete restoration of function is obtained.

The patients' testimony to the complete curative effect of the intra-nasal operation is most striking. Watering ceases from the very day of the operation, and, as far as we have seen, the result is permanent.

At first, cases which seemed specially suitable were mainly chosen for the operation. Experience showed that cases with hugely distended tear sacs, or with abscess and fistula, were equally suitable.

The case of children presents greater difficulties. For them general anaesthesia is necessary, and a greater drawback is the increased technical difficulty of the operation owing to lack of room in the nose.

In children palliative treatment, such as the passage of probes, is, in my experience, much more likely to prove successful than in adults.

After carefully watching the results achieved by this intra-nasal operation, I feel confident that this method of treatment will eventually be widely adopted.

Personally, I feel inclined to leave the operation in the hands of a highly trained rhinologist; but no doubt many keen young ophthalmic surgeons will take the trouble to acquire the necessary technical experience and dexterity required for its performance.

With regard to this series of cases my sole function was to provide Dr. Fraser with suitable material and give my candid criticism on the operative results obtained. J. V. P.

An analysis of the 50 cases gives the following results:

Sex.—43 of the patients were females and only 7 males.

Age in decades.— 1 to 9 years = 2 cases
10 to 19 ,, = 6
20 to 29 ,, = 3
30 to 39 ,, = 9
40 to 49 ,, = 12
50 to 59 ,, = 8
60 to 69 ,, = 5

In 5 cases the ages were not given.

Side.—In 4 patients the condition was bilateral. The right side only was affected in 19 cases, and the left side only in 27 cases.

Duration.—This varied from five weeks to ten years, the average duration of the trouble being about three years.

Causation.—In the majority of the cases no cause was stated. One patient said that the trouble had come on after scarlet fever, while another patient blamed whooping cough. Another patient informed us that her mother and sister had a similar trouble. In at least 2 cases the patients blamed a blow in the region of the eye as the cause of the trouble in the tear sac. It is interesting to note that of the 50 cases operated upon, only 4 occurred in private practice, i.e., 8 per cent. On inquiring from the Acting Superintendent of the Royal Infirmary, the writers were informed that probably about 80 per cent. of the population of Edinburgh and the South East of Scotland (from which the Infirmary mainly draws its clientèle) would come to charitable institutions such as the Royal Infirmary for minor operations like intranasal drainage of the tear sac. According to this calculation, 10 of the 50 cases, instead of 4, should have been operated on as private patients. It would thus appear that chronic purulent dacryocystitis is not only absolutely, but also relatively, more common among the poorer sections of the community than among the more wealthy.

Previous treatment.—The majority of the patients had been previously treated in the Eye Department by dilatation of the punctum and canaliculus, washing out the tear sac and the passage of probes into the nose. In at least 18 cases the patient had suffered from abscesses around the tear sac. Four patients had had the nose operated upon (turbinotomy) before West's operation was performed.

Condition of the nose.—In 27 cases the nose was normal, though in 5 of these it was remarked that the tubercle of the septum appeared to be swollen. The other 23 cases showed the following conditions:—Deviation of septum, obstructing both sides of the nose, 1 case; deviation of septum to side of tear sac trouble, 5 cases; deviation of septum to side opposite that of tear sac trouble, 2 cases; perforation of septum, 2 cases; inferior turbinal enlargement, 2 cases; general hypertrophic nasal catarrh, 4 cases; large middle turbinals containing air cells, 2 cases; polypoid

middle turbinals with ethmoiditis, 3 cases; purulent rhinitis, 1 case; atrophic rhinitis, 3 cases; antro-choanal polypus and syphilitic lesion of lateral wall of nose, 1 case; perforation of the hard palate, 1 case. The general conclusion come to was that slight intranasal abnormalities had little or nothing to do with the commencement of the tear sac trouble. The findings, however, do not negative the view that the dacryocystitis had originally been due to infection passing up the nasal duct from the nose.

Tear Sac.—In 7 cases an abscess round the sac was present at the time of operation. The majority of the other cases showed considerable dilatation of the tear sac (in one case, No. 26, the sac was so dilated as to extend outwards beyond the middle of the lower border of the orbit) and in all muco-pus or pus could be squeezed out at the punctum on pressure over the sac. In several cases the patients remarked that the tear sac trouble became acute from time to time, with comparatively quiet intervals.

Technique.—The operator makes no claim to any "method" of his own. The technique finally adopted is merely a modification of that described by Paterson, of Cardiff, in the *Journal of Laryngology, Rhinology and Otology*, 1914, p. 169, but where the nasal septum is markedly deviated to the affected side it is necessary as a preliminary to perform the submucous resection operation. This may be done a week or two before the tear sac is dealt with, but the operator has always carried out both procedures at the same sitting in the small number of cases in which the septum operation proved necessary.

In the first ten or twelve cases the outer end of the canaliculus was slit by Dr. Paterson or Dr. Traquair before the tear sac operation. Later, as experience was gained, the operator carried out this small procedure himself, but during the last year he has entirely given it up as he finds that it is not necessary. All that is required is to cocainise the conjunctival sac before operation, and, after the tear sac has been exposed from within the nose, to dilate the punctum and pass a lacrymal probe along the canaliculus into the sac.

In children a general anaesthetic is advisable. Even adult patients complain of the removal of the bone with the gouge and hammer. Whether general anaesthesia is employed or not, the patient is given an injection of heroin and atropin about half an hour before operation, and the region in front of the anterior end of the middle turbinal is packed with strips of narrow gauze wrung out of 10 per cent. cocain and adrenalin (five drops of adrenalin to 55 of cocain.) If general anaesthesia is employed, as in children, only five per cent. cocain is used. The patient is now taken back to bed for half an hour, and is then removed to the operating table. There the intranasal packing is taken out and, with the aid of a nasal speculum and good reflected light, the mucosa covering the

inner surface of the frontal process of the superior maxilla is injected with 1 per cent. novocain and adrenalin (novocain 20 minims and adrenalin 1 minim). From five to ten minutes later a D-shaped incision is made in this region (Fig. 1)—the curved portion of the incision anteriorly and the straight portion posteriorly—just in front of the anterior end of the middle turbinal. With the sharp periosteum elevator this flap of mucous membrane is raised up and removed with forceps, exposing the inner surface of the frontal process over an area about half the size of the finger nail. With the gouge and hammer the bone in this area is removed, exposing the lacrymal sac, which is dilated in the majority of these cases and bulges inwards towards the nose (Fig. 2). Occasionally one has to remove a portion of the anterior end of the middle turbinal, but as a rule this is not necessary. Sometimes the most anterior of the ethmoidal air cells is opened up during the removal of the bone, but this does not complicate the operation as the thin pink lining membrane of the air cell is not likely to be mistaken for the dense bluish-white wall of the tear sac. The greatest difficulty met with is in those cases in which the bone of the frontal process is very thick. It is no good being too gentle as the bone must come away, and slight taps with the hammer only prolong the operation. When a sufficient area of the sac has been exposed, a small piece of gauze wrung out of 10 per cent. cocain and adrenalin solution is packed into the region, and the intranasal operation temporarily abandoned, while the punctum is being dilated and the lacrymal probe passed into the sac. The nasal speculum is now introduced again, the gauze removed from the nose, and the inner wall of the sac made to bulge inwards by pressure on the lacrymal probe, carried out by an assistant or nurse (Fig. 3). The sac is next incised with a small, sharp-pointed, curved knife, as far forward as possible (Fig. 4). A pair of double cutting forceps is now introduced, so that the female blade lies inside the sac, while the male blade lies against the inner wall of the sac. On closing the forceps a piece of the inner wall is punched out (Fig. 5). One finds that pressure kept up with the lacrymal probe, after the sac has been opened with the knife, causes the incision to gape, and facilitates the entrance of the female blade of the forceps into the sac. As an alternative to the use of forceps one may, after opening the sac as described above, grasp the inner wall with Paterson's long mouse-toothed forceps. The inner wall is then drawn inwards towards the nasal septum, and excised with the small curved bistoury. This latter procedure is only suitable in a fairly roomy nose (Fig. 6).

The operator makes no attempt to replace the original flap of nasal mucous membrane, and does not find that there is any tendency to dryness or crusting in the region of the operation.

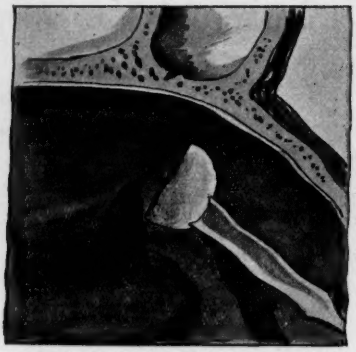


Fig. 1. The D-shaped area of mucous membrane has been removed, the inner surface of the frontal process of the left superior maxilla exposed and *the gouge applied.*

Fig. 2. The bone exposed has been removed and the dilated tear sac bulges into the wound.

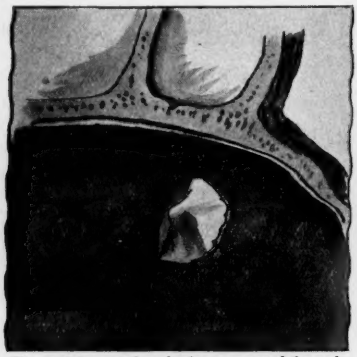


Fig. 3. A lacrymal probe is now passed through the lower punctum and canaliculus *into the sac* and pressed against the inner wall so as to "tent" it.

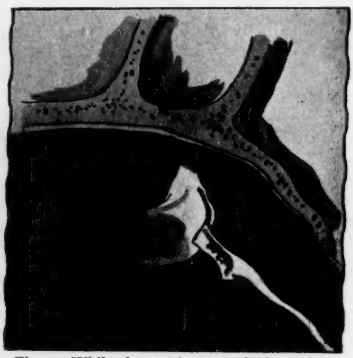


Fig. 4. While the sac is "tented" inwards a *long bistoury is used to incise the inner wall.*

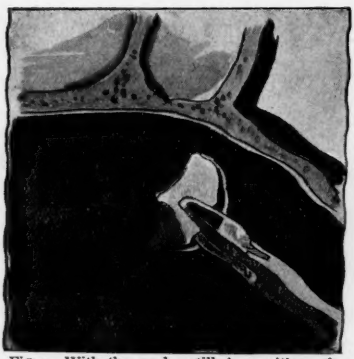


Fig. 5. With the probe still in position, the *"female" blade of a small nasal* "double cutting" forceps is introduced into the sac. On closing the blades a portion of the inner wall of the sac is removed.

Fig. 6. As an alternative to the procedure indicated in Fig. 5, the inner wall of the opened sac may be grasped with Paterson's mouse-tooth forceps and drawn inwards to facilitate its excision with the small curved bistoury as shown *above.*

There is, of course, some bleeding from the nose an hour or so after operation, when the effects of the local anaesthetic have passed off. Further, as is usual after nasal operations in which cocain and adrenalin have been used, there is considerable obstruction of the nose on the side of operation for two or three days.

Remarks.—In one case the anterior ethmoidal cells were diseased, and were opened up and cleaned out at the time of the operation on the tear sac. In only one case was it found impossible to expose the sac sufficiently by the intranasal route. (The patient was a builder, and the trouble in the tear sac had followed injury to the lower part of the forehead and root of the nose, due to the fall of a heavy stone lintel on this region. At operation it was found that the bone of the frontal process of the superior maxilla was so thick that the inner wall of the tear sac could not be sufficiently exposed.) Opening of the sac was almost invariably accompanied by a very free escape of pus into the nose. In several cases the pus had an extremely foul odour. In about a quarter of the cases the operation was rendered somewhat difficult on account of the narrowness of the nose, and in three the submucous operation was performed immediately before the operation on the tear sac. In seven cases the bone of the frontal process of the superior maxilla was very thick. In one case there was considerable bleeding from the anterior part of the incision in the nasal mucous membrane, and the local application of adrenalin did little good. When, however, the facial artery on the same side was compressed by an assistant, the bleeding was at once controlled, so that the operation could be completed successfully.

One case appears to be of special interest. The patient was a female of middle age, who suffered from antro-naso-choanal polypus on the left side. The left nasal cavity contained much pus. The patient had complained of pain over the left side of the face and trouble with the left tear sac for a year. This suggested the possibility of malignant disease. Operation was performed under general anaesthesia, the left tear sac being dealt with first of all. The radical operation on the left maxillary antrum was next performed and it was found that the cavity was full of pus and polypoid mucosa. The inner wall of the antrum had completely disappeared and the large choanal polypus was thus easily removed through the antral cavity and mouth wound. Tissue removed from the walls of the antrum was submitted to a pathologist who found giant cells and reported the condition as tuberculous. Subsequently, however, a history was obtained from the patient of syphilitic infection, and the Wassermann reaction proved positive. The patient made a good recovery, both from her antral and tear sac troubles.

In the majority of cases the operation only occupied from ten to fifteen minutes from the time of making the incision until the

inner wall of the sac had been freely removed and intrasal drainage established. In only a few instances did the operation extend to half an hour.

Complications.—The operation is followed by a little redness, swelling, and tenderness externally, in the region of the tear sac, in the majority of cases. In only four was there a sufficient amount of bleeding into the tissues to justify the use of the term "black eye" as a complication of the operation. In none of the cases were there any other disagreeable after-effects.

Stay in Hospital.—Seven of the patients did not stay in hospital at all but were operated upon as out-patients. Of the other 43 (with the exception of the case of the builder already mentioned, who was in hospital six weeks) the average stay in hospital was four days.

Results.—Of the 50 cases operated upon, 48 reported—24 in person and 24 by letter. The 24 patients who returned for inspection were seen by one or other of the writers at periods varying from three months to three years after operation; 19 of them were completely cured, *i.e.*, there was no watering of the eye and no discharge of mucopurulent material on squeezing the sac, while the intranasal opening was free; 2 of the patients still complained of slight watering of the eye; while in 3 cases the operation had not been successful, *i.e.*, there was discharge of muco-pus from the sac and closure of the opening into the nose. Two of these three cases were operated upon again. One was that of a child of five years and the second operation also proved unsuccessful as it was found to be impossible to make a free opening between the sac and the nose, mainly on account of the small space available. The other case was seen a month after the second operation, when the condition was entirely satisfactory. The third unsuccessful case was that of the builder already mentioned.

Twenty-four of the patients, who lived in the country, reported by letter. Of these, 19 stated that they were completely cured. One patient reported that there was still slight watering of the eye and one reported that the tears gathered at the inner corner of the eye, causing a slight swelling, and only passed into the nose when the "lump was squeezed." Three of the cases appear to have been comparative failures, *i.e.*, the patients still complain of some purulent material gathering in the sac and of the tears running over the cheek.

If we take these two groups together, we find that of the 48 cases which reported, 38 may be regarded as complete cures (about 80 per cent.); 5 cases as considerably improved (10 per cent.); and 5 cases as comparative or complete failures (10 per cent.). J. S. F.

The writers wish to express their gratitude to Dr. E. C. C. Eccott for his kindness in preparing the illustrations.

ANNOTATIONS

London the Centre of Post-Graduate Ophthalmology

It scarcely admits of doubt that London is without a rival in its wealth of clinical material, not only in ophthalmology, but also in other branches of medicine and surgery. For many years our brethren of the dominions and our cousins of America have regarded Vienna or Berlin as the Mecca of ophthalmology, and to a large extent have ignored London's splendid resources. We are now not interested to inquire as to the cause or causes of this neglect. One thing, at least, is certain at this juncture, namely, that it should not be allowed to continue. By organization and co-operation much may be done to make London what it should be, the world centre of post-graduate ophthalmology. The work should be undertaken now, so that when peace is an actual fact, London would be ready to receive the host of visitors wishful to better their knowledge of eye work who may confidently be expected to visit these shores. If individual hospitals find difficulties in the way of providing lectures and demonstrations or of finding adequate material for those purposes, might not such obstacles be got over by the union for teaching purposes of the existing institutions? To that union might be added certain other hospitals, more particularly such as care for diseases of the nervous and genito-urinary systems, while special attention should be paid to the teaching of physiological optics, bacteriology, pathology, and radiography. On the staff of such a centralized institute, as is here outlined, there would be room for the pure scientist as well as his ophthalmological colleague. The hospital element would be strictly subordinated to the main function of such a place—the teaching of ophthalmology. Such an amalgamation of forces could scarcely fail to influence the teaching of ophthalmology in the metropolis of a far-flung empire.

The Oxford Diploma in Ophthalmology

After an interval of three years the examination for the Diploma in Ophthalmology at Oxford is to be resumed. The examination will begin on Monday, July 21, 1919, and is open to persons whose names are on the Medical Register of the United Kingdom, and to Bachelors of Medicine or Doctors of Medicine of Universities outside the United Kingdom, who have received permission from the Board of the Faculty of Medicine.

Candidates will be required to produce evidence satisfactory to the Board that they have duly attended a Course of Clinical

Ophthalmology for twelve months in connection with Hospitals and Institutions approved by the Board, and that they *either* have already obtained Certificates at Oxford of Courses of study in Ophthalmology, Physiological Optics, and the Anatomy of the Eye, *or* have served for a period of not less than twelve months since August, 1914, in the Forces of His Majesty or his Allies or the United States of America.

The examiners appointed for this year are Dr. G. Mackay, of Edinburgh, and Lieut.-Colonel R. H. Elliot, of London.

Most of the teaching staff having been engaged on military work, it has been found impossible to hold the ordinary two months' course of instruction at the University this year, and we think the authorities are to be congratulated on throwing the examination open for this occasion to those who have been serving their countries in the war, as it will afford an opportunity to many men to take this qualification before returning to their homes or settling down to regular practice again.

In 1920 and subsequent years the ordinary regulations and requirements, as set out in the Statute and Regulations, come into force again.

Anyone requiring any further information is advised to apply to the Assistant Registrar, University Registry, Oxford, from whom all details can be obtained.

Blindness from Ophthalmia Neonatorum

The National Committee for the Prevention of Blindness (New York), has issued a new edition of its " Summary of State Laws and Rulings relating to the Prevention of Blindness from Babies' Sore Eyes " (publication No. 9 of the series). A perusal of its contents shows that there has been a great advance in legislation since the first edition of this pamphlet appeared in 1916. The material is briefly summarized below:

1. The reporting of babies' sore eyes to the local health officer or to a physician is compulsory in ... ... 41 States
2. The reporting law is printed on the birth certificate in ... ... 10 ,,
3. Local health officers are authorized and required to secure medical attention for uncared-for cases, or to warn parents of the dangers and advise immediate treatment in... ... ... 28 ,,
4. Births are reported early enough to be of assistance in prevention of blindness in ... ... 17 ,,
5. The question as to whether or not precautions were taken against ophthalmia neonatorum is included on the birth certificate in ... 19 ,,
6. Free prophylactic outfits are distributed in ... ... 22 ,,
   and strongly recommended in an additional ... ... 4 ,,
7. The use of a prophylactic as a routine measure is compulsory in... 19 ,,
8. Popular educational leaflets, relating in whole or in part to prevention of infantile blindness, are distributed by State Departments of Health in ... ... 29 ,,

Of these various measures the National Committee regards as the most important the compulsory notification to the local health officers of all cases of ophthalmia, so that medical attention can then be provided for all uncared-for cases of the disease. This implies an early notification of all births, as well as authorization of the health officer to secure necessary medical and nursing attention. Notification is adopted in all the States but two, but not early notification—ten days seems to be the general rule. In twenty-eight of forty-nine States provision is made to meet the latter.

Photometry

An interesting but necessarily incomplete account of some recent military uses of photometry appears in the *Illuminating Engineer* (November and December, 1918). Two Committees of the Society had been appointed to deal with the illuminating value of flares, parachute lights, etc., and the brightness of self-luminous radio-active paint. The main lines of investigation obviously presented the greatest possible contrast. In the one case the source of light was of very short duration, great intensity, and considerable fluctuation; while in the other the luminosity was of low intensity which very gradually declined and required a long period of time for its study. For the study of the value of flare lights a photometer was required which should be portable, self-contained, direct reading, and purely inspectional without requiring any manipulation or adjustment during use. Such a photometer was designed by Mr. J. G. Clark which proved satisfactory in use. A full account of this simple instrument as also of another satisfactory model from the design of Mr. J. S. Dow is given by Mr. A. P. Trotter in the Journal referred to. It was satisfactory to find that careful tests showed that our flares were in no way inferior to those used by the enemy. The photometer employed in these tests has the advantage of being visible to a number of observers at the same time, and could be employed for demonstration purposes in testing ordinary illuminating methods for factory and school lighting, etc. The testing of luminous compositions gave very valuable results which incidentally resulted in a considerable saving of the costly radio-active paints. The tests were made in duplicate by Messrs. Dow and Clinton. The principle of the method adopted consisted in the viewing of the luminous sample through a very small slit in a white surface illuminated by a glow lamp and screened by a suitable green glass filter.

The Calcutta Eye Hospital

In the *Indian Medical Gazette* of July, 1917, Lt.-Col. F. P. Maynard, of Calcutta, discussed the question of the provision of a new eye hospital for Calcutta.

The principal interest of that communication lay in the fact that the new eye hospital for Calcutta was still only in the state of being "proposed." Years ago, when the Madras Eye Hospital was still incomplete, but yet had made considerable progress towards its present condition, Colonel Maynard, the Superintendent of the Calcutta Eye Hospital, wrote to the Superintendent of the Madras Hospital of his hopes of a new hospital. In those days, and probably long before, he was dissatisfied with the state of the hospital under his charge, as indeed any one in such a position might well have been; but he was met then, and, we fear, still is met, with a ***non-possumus***. During the war this might easily be understood, but the position was very different in the days before the war. When one reflects on the appalling loss of economic efficiency in India, which results from preventable and from curable blindness, it is impossible to avoid the conclusion that the Government of Bengal has shown a want of grasp of the big problems before them in allowing so able and enthusiastic an officer as Colonel Maynard to ask so long in vain, and to wait years for a suitable hospital to work in. The eye hospital at Calcutta has long been a disgrace to the Presidency, from the point of view of buildings and conveniences. Calcutta, with a population of 1,220,000 people in 1910, is the second largest city in the British Empire, and it is the capital of the Bengal Presidency, which numbers over 45,000,000 souls. ***It has one eye hospital***, and that one, despite the excellence and zeal of its staff, is inefficient to a degree! To pass over everything else for the time being, let us consider Maynard's last paragraph: "It is hoped in time to collect a good museum—the material is enormous, and ***at present runs mostly to waste***—and with the help of a pathologist and registrar to carry on research work into the pathology of the eye, as affected by tropical diseases." The italics are our own. Side by side with this we may place the unedifying spectacle of a comparatively subordinate Indian civilian trying, during his furlough in England, to raise the means to institute a campaign against blindness in India. One uses the word unedifying, not in detraction of the excellent work which that very able and farseeing civilian, Mr. Henderson, is trying to inaugurate, but in comment upon the fact that the inactivity of those responsible should have made such a state of things possible. No one who has not worked in India can form a conception of the enormous amount of preventable and curable blindness that is laying its shadow over the health, happiness, and usefulness of this great portion of our Empire. The

facts are incontrovertible. They have been brought to the notice of the different Governments; and yet comparatively little has been done. Some of the responsible administrators appear to suppose that the medical officers, when they bring these matters forward, are riding hobbies, or are striving to advance their own interests under cover of Government service. What is wanted is a larger conception of the situation and a more statesmanlike method of dealing with it. Were the question seen as it really is, even "the war" would not have been allowed to stand in the way of energetic action being undertaken, not merely in Calcutta, but in many other parts of India, which would remove the stain of insufficient hospital accommodation for dealing with eye disease. According to the latest census, there are 600,000 totally blind persons in India. This does not include the partially blind, or those going blind. Much of this blindness is preventable; much is curable. The very first means for fighting this scourge is so to equip the few big hospitals at the educational centres that the medical men turned out from them shall have an opportunity, and indeed the best possible opportunity, of learning all that a student can be taught of the treatment of disease of the eye. The need is self-evident, and parsimony is worse than a mistake; it is a sin against responsibility.

ABSTRACTS

I.—AETIOLOGY OF LEBER'S DISEASE

Zentmayer, William (Philadelphia).—Concerning the etiology of hereditary optic nerve atrophy. Report of two cases with interesting X-ray findings. *Trans. Amer. Ophthal. Soc.*, Vol. XVI (1918), p. 6.

Zentmayer's report deals with two families, A and B. In the first (A) there were four children, of whom three were alive and two of them affected with hereditary atrophy of the optic nerve. In the first patient, who was affected at thirty years of age, the pituitary fossa was, according to an X-ray examination by Dr. Henry K. Pancoast, 13 mm. in an antero-posterior direction by 12 mm. in depth. In the second patient, aflected at twenty-nine years of age, the cure of nasal polypi and purulent ethmoiditis failed to arrest the progressive loss of vision. The fossa measured 10 mm. by 11 mm., *i.e.*, was on the border line of the normal. In the second family (B) there were nine children, namely, 5 males and 4 females. Of these the first and seventh child,

both males, were affected, while the third, a female, showed symptoms suggestive of incipient pituitary disease. In the first affected the pituitary fossa measured 12 mm. by 10 mm. In the second the fossa was 13 mm. by 12 mm. Two unaffected members of the family were submitted to X-ray examination. The pituitary fossa in the first was 9 mm. by 9 mm., and in the second 12 mm. by 10 mm. In the latter, vision was normal, but the left papilla was obscured and slightly prominent; the visual fields were concentrically contracted for form and colour, and a minute central relative scotoma was present in the right field.

Zentmayer concludes that, while his observations are in no way conclusive, his results are sufficiently uniform to merit attention. The normal pituitary fossa varies greatly in size and often oversteps the limits set as maximum normal, while our present knowledge of heredity in connection with disorders of the pituitary body is too vague to permit of assertive statements.

S. S.

II.—THE ORIGIN OF DIABETIC CATARACT

Schanz, F. (Dresden).—The origin of diabetic cataract. (Die Entstehung des Zuckerstars.) *Arch. f. Ophthal.*, Vol. XCI, Part ii, 1916.

Schanz was explaining his views on the action of light on living albumen in reducing the more soluble to the less soluble varieties at a Dresden Congress, when Schieck objected that the development of diabetic cataract seemed opposed to this theory, but Meyer suggested that possibly the presence of sugar aided the action of light. Schanz then prepared a sterile solution of lens albumen from pigs' eyes. He put 50 c.cm. of this solution into each of six Ehrlenmeyer flasks. To two of the flasks he added 10 c.cm. of a solution of 60 per cent. of grape sugar in salt solution and 1·2 c.cm. of acetone. To the next two he added the sugar solution only and 1·2 c.cm. of salt solution to equalize the bulk. The remaining two flasks were diluted to the same extent with salt solution only. Of each pair, one was kept in the dark, while the other was exposed to daylight on two sunny days. As he had still 70 c.cm. of the original albumen solution left, he divided this between two flasks, to one of which he added acetone only, and to the other an equal amount of salt solution. On testing the contents with very dilute acetic acid, a precipitate was always produced in the tubes exposed to light, after the addition of an amount of acetic acid that produced no precipitate in the unexposed tubes. Of the three, the opacity

was most marked in the tube that had sugar plus acetone, next in the tube that had the sugar only, and least in the one that contained only albumen. The two tubes, of which one had acetone only and the other no addition, were both exposed to light. The opacity was much more marked in the acetone tube. Schanz considers that these experiments show that the presence of sugar and acetone aid the action of light in rendering the lens opaque.

E. E. H.

III.—RETINITIS CIRCINATA

Blake, Eugene M. (New Haven, Conn.).—The etiology of retinitis circinata. *Trans. Amer. Ophthal. Soc.*, Vol. XIV, Part ii, p. 753, 1916.

This communication dealing with the aetiology of retinitis circinata represents a thesis presented by **Blake** for membership in the American Ophthalmological Society.

The frequency of the affection, first described by Hutchinson under the title of "Symmetrical, Central Choroido-retinal Disease occurring in Senile Persons" (***Royal London Ophthalmic Hospital Reports***, 1876), is commonly estimated at one case in every 10,000 eye patients, but Blake considers this to be an under-estimate. The disease is essentially in the nature of a degenerative process. Females are affected in the proportion of two to each male. The youngest patient, whose case was reported by Weltert, was aged 12 years, and the oldest is the one now brought forward by Blake, aged 80 years.

The author summarizes the different explanations that have been offered for the aetiology of the disease as follows.—(1) That the white ***plaques*** are the result of an albuminous transudate into the deeper layers of the retina (Fuchs). (2) That they result from changes in the blood-vessels (Weeks and Nuel). (3) That they result from the fatty degeneration of previous haemorrhages (de Wecker). (4) That they simply represent long-continued oedema (Marcus Gunn and de Schweinitz). (5) That they result from obliteration of the vessels supplying the macular region, and degeneration of the parts nourished by them (Goldzieher). (6) That the white spots are the outcome of clusters of fat cells following haemorrhage (Ammann). Blake's own feeling is that retinitis circinata usually develops from a previous haemorrhagic process in the retina, although he does not assert that demonstrable haemorrhages are always present. In the case brought forward by him retinitis circinata followed positively in the wake of haemorrhages.

S. S.

IV.—ANAESTHESIA AND ANALGESIA IN EYE OPERATIONS

(1) **Seidel, E. (Heidelberg).—On anaesthesia of the nerve trunks by means of injection into the posterior part of the orbit. A new procedure for increasing the use of local anaesthesia in enucleation and exenteration of the globe and orbit. (Ueber die Leitungsanästhesie durch die hintere Orbitalinjektion. Ein neues Verfahren zur Erweiterung der Indikation für die Anwendung der Lokalanästhesie bei Enucleationen und Exenterationen des Bulbus und der Orbita.)** *Arch. f. Ophthal.*, Vol. LXXXIX, Pt. iii, 1915.

(1) **Seidel**, who is a firm believer in the use of local anaesthesia in enucleation of the globe and orbital exenteration, has devised a method for reaching the posterior part of the orbit in septic conditions without risk of infection from the surface. In non-septic cases his procedure is as follows: One drop of 10 per cent. cocain every minute for five minutes into the conjunctival sac; then 1-2 c.cm. of a solution containing 1 per cent. novocain in physiological salt, to each 10 c.cm. of which 5 drops of adrenalin are added, is injected about 4 mm. from the limbus. The lids are then closed for 1-2 minutes and massaged to diffuse the fluid. The next step consists in the introduction of a stout, hollow needle connected with a 2 c.cm. syringe above, below, nasal and temporal over the muscular insertions. The needle, with gradual pressure on the piston, is pushed in to a point half way between the optic foramen and the entrance of the optic nerve into the globe. If this is carefully done so that the needle is pushed on as the tissue becomes oedematous no pain will be caused. About half the syringe full is used during the introduction and the remainder injected direct behind the globe. After the injection of 2 c.cm. from each of the four points, the lids will be oedematous and the globe proptosed. The operation should begin twenty minutes later. In ordinary cases Seidel has found this procedure perfectly satisfactory, but in cases where the conjunctiva is in a septic state or where the pressure on the globe would cause the extrusion of septic material the method would run the risk of infecting the deeper parts of the orbit. He has, therefore, devised the procedure described in the present paper. This consists in the introduction of a smaller quantity of fluid of a higher concentration at the apex of the orbit, from below upwards, through the hinder third of the inferior orbital fissure, in a direction at right angles to the axis of the orbit. The place of insertion of the needle lies about a finger's breadth under the anterior part of the superior maxilla. After disinfection of the skin with iodine, and infiltration with a 1 per cent. novocain and adrenalin solution, about 6 c.cm. of the same solution are injected on the

posterior surface of the superior maxilla, and the neighbourhood of the pterygo-palatine fossa. Five minutes later a stronger needle, about 8 cm. in length, like those used in lumbar puncture, is inserted at the level of the anterior border of the masseter towards a point a thumb's breadth to the opposite side of the junction of the coronal and sagittal sutures; this point is best marked by the index finger of the other hand. Diagrams of the direction taken, both in the skull and the living patient, are given in the paper and help to explain the instructions. When the needle has penetrated about 4.5 cm. considerable resistance to its further progress will be felt. This is due to the fibrous tissue that closes the orbital fissure. When this structure is perforated some pain is felt, as it has not been reached by the preceding infiltration. The syringe should contain 2 c.cm. of a 4 per cent. novocain-adrenalin solution, of which one half should now be injected slowly. If the needle is in the proper position a slight amount of exophthalmos will appear. The needle is then pushed on 0·5—1 cm. further and another 1 c.cm. injected. By pushing the needle on a further 2 cm. the orbital wall is reached close to the optic foramen. 4 c.cm. of the fluid should now be injected to act as a retrobulbar depôt. During this last injection the syringe is slowly drawn back. In this way some 4—6 cm. of the fluid is injected. It is important to give the solution plenty of time to act before starting the operation. Seidel advises waiting for at least twenty minutes. No serious complications have occurred.

E. E. H.

(2) **Dagg, Thomas L. (Chicago).—Rectal (oil-ether) anaesthesia in ophthalmic operations.** *Ophthal. Record*, October, 1916.

(2) **Dagg** recommends rectal anaesthesia, according to Gwathmey, of New York, in operations upon the eye, although it does not appear from the communication that he has ever actually carried it out for that purpose.

The night before operation, the patient is given a cathartic, and 4 and 2 hours prior to operation, enemata. Successful anaesthesia implies a clean mucous membrane. One hour prior to being taken into the theatre, morphia (1/8 to 1/3 grain) and atropin (1/150 grain) are adminstered. The oil-ether consists of one part of oil (cotton seed or olive) and three parts of ether. The quantity for use is determined by the body weight of the patient, being one ounce of oil-ether to every 20 pounds of weight. In no case, however, must more than 8 ounces of oil-ether be employed. With the patient in the Sim position, the liquid is allowed to run slowly through a soft rubber catheter, introduced for 4 or 5 inches into the rectum. The patient is often asleep by the time that the injection is complete. The stage of anaesthesia is shortened if a towel be thrown over the patient's head (difficult, one would imagine, in operations on the

eye), so as to retain a portion of the expired air. In possibly one-half of the cases, a few whiffs of ether are necessary to get the stage of excitement into satisfactory surgical anaesthesia. In an emergency, the bowel is at once emptied by repeated douches of plain water. Under any circumstances, at the end of the operation, the bowel is emptied by the passage of a colonic tube and massage of the colon, together with flushing with water, after which Dagg injects 2 to 4 ounces of oil. Rectal anaesthesia is contra-indicated in the presence of haemorrhoids, colitis, and so forth. S. S.

(3) **Gwathmey, James T. (U.S. Army), and Karsner, Howard T. (U.S. Army).—General analgesia by oral administration.** *Brit. Med. Jl.*, March 2, 1918.

(3) **Gwathmey** and **Karsner** make a preliminary report upon the induction of general analgesia by the oral administration of certain drugs a few minutes before painful dressings are made or short operations are performed, which they consider as safer than general anaesthesia, often employed for the purposes named. In the case of operations, however, it may be necessary to supplement the analgesia by a hypodermic injection of morphia, or even by light inhalation anaesthesia. Experiments were made upon rabbits with nikalgin (quinin and urea hydrochloride), trional, morphin tartrate, paraldehyde, ether in olive oil (25 per cent. and 50 per cent.), paraldehyde in ether in olive oil, and some other combinations. The best results in rabbits were obtained by the use of ether in oil. As regards patients, the authors recommend the following formula: Chloroform, ʒ ss. to ʒ i.; ether and liquid paraffin of each ʒ iii. ss. In giving the mixture, a mouthful of port wine is retained for about thirty seconds and then swallowed; the ether mixture is next taken, and is followed at once by another dose of port wine. It is possible that the plan advocated by Gwathmey and Karsner may prove of service in eye work. S. S.

V.—TUMOURS

(1) **Siegrist (Berne).—Demonstration of various ophthalmoscopic conditions, etc. (Demonstration verschiedener ophthalmoscopiker Befunde u.s.w.).** *Bericht der Ophthalmologischen Gesellschaft, Heidelberg*, 1912.

(1) **Siegrist** showed some beautiful drawings of the fundus which are to be found in a plate attached to the *Bericht*. One shows a rare tumour formation, perhaps due to echinococcus. The patient had cerebral symptoms and ultimately died, but no autopsy was

made. Another plate shows a tumour at the posterior pole of the globe in a child who had lost the other eye because of glioma. The exact nature of the case was doubtful. The plates are well worthy of careful study.

T. HARRISON BUTLER.

(2) **Friedenwald, Harry (Baltimore).—Giant cell sarcoma of orbit.** *Amer. Jl. of Ophthal.*, June, 1914.

(2) **H. Friedenwald** refers in the first place to the case of giant cell sarcoma of the orbit reported by Flemming and Parsons in 1905, and then supposed to be almost unique. He then reports a case of his own in which the clinical diagnosis was malignant growth of the lacrymal gland, and the pathological report "giant cell sarcoma originating in the orbital periosteum." The pathologist, Standish McCleary, remarks that while myeloplaxes are normal constituents of the bone marrow, they may, under pathological conditions, be produced by the periosteum. Usually tumours of this type have a very low grade of malignancy as there is little tendency to recurrence and metastasis, except in those cases in which there is a great abundance of small round cells, which by proliferation confer the malignant features upon the tumour. He further remarks that, as the growth in this particular case possesses more round cells than are usually encountered in those tumours which are confidently expected not to recur, it will be interesting to know the subsequent history.

Friedenwald is fortunate in being able to report that after four and a half years there has been no recurrence.

ERNEST THOMSON.

(3) **Alt, Adolf (St. Louis).—Haemangioma of the eyelid.** *Amer. Jl. Ophthal.*, June, 1914.

(3) The very interesting and instructive article by **Alt** should be carefully studied by those who happen to come across any of these rare cases.

Alt classifies haemangioma into teleangiectasia and cavernoma of the eyelid. The former consists of innumerable densely packed small blood-vessels which are not exactly capillaries, and which cannot with certainty be called arteries or veins. Such a tumour has usually a lobulated appearance, due to numerous connective tissue septa which traverse it. According to Ogawa, these tumours grow, not by the throwing out of side branches, but by a continued growth in the length of the pre-formed vessels, gradually pushing the surrounding tissues aside. In the cavernoma, on the other hand, we find large cavities containing blood, separated by thin connective tissue walls, lined with endothelium. Such a tumour

may sometimes represent only one large and continually enlarging cavity, due, probably, to the giving way of previously existing septa.

Teleangiectatic tumours usually appear as reddish-blue smooth or lobulated swellings, while the cavernomata are more bluish or purplish.

Until recently Alt has followed with considerable success H. Knapp's practice of excising haemangiomata of the eyelid. In the cases which have not been previously subjected to any treatment, it is usually possible to remove the tumour as a whole and thoroughly. The scar is generally small and not disfiguring. The author describes a case in which there had been previous treatment which had not succeeded. In this case Alt's operation of excision was not a success either.

In spite of the usually good result of excision, if there are means to produce the shrinkage and disappearance of such tumours without any scar at all, it is better to use such means. In Alt's opinion, the cautery and electrolysis do not fall under this head. The more modern methods consist of injections into the tumour of boiling water or of absolute alcohol, and the treatment with CO_2 snow. The last two he has tried. The absolute alcohol seemed to be of little use, but the freezing method, although slow, has given him a very good result in one case. In a little more than a year he froze the tumour twenty-one times. He began with twenty to twenty-five seconds, and has gradually increased the duration up to one minute. There is no longer anything to be felt of a tumour, yet the nasal part of the lid is to a small extent evidently without tarsal tissue, and also is devoid of cilia. The part still has not receded to its normal position, yet the child's eye is wide open, and the result is good.

ERNEST THOMSON.

(4) **Weidler, Walter B. (New York).—Intra-ocular sarcoma.** *New York State Jl. of Medicine*, September, 1914.

(4) **Weidler** publishes the findings in a case of spontaneous rupture of the globe, as the result of severe haemorrhage from a sarcoma of the choroid. He gives the case frequency of sarcoma of the uveal tract as one in 1,700 patients, and discusses the aetiology of the glaucomatous phenomena. The increase of tension may be due to (1) inflammatory changes; (2) mechanical pressure, direct or indirect, upon the angle of the chamber; (3) very doubtfully to pressure on vasa vorticosa; and (4) likewise doubtfully to deposits in the angle of the chamber (such deposits being cellular, fibrinous, or pigmentary). Rupture, in the course of intra-ocular sarcoma, takes place through the centre of the cornea, instead of at the usual seat, viz., the sclero-corneal margin. Such cases are very apt to be set down as due to haemorrhagic glaucoma.

R. H. ELLIOT.

(5) **Lamb, Robert Scott (Washington).—Sub-periosteal blood cyst (?) of the orbit simulating osteosarcoma.** *Ophthalmology*, April, 1915.

(3) Cases of the kind reported by **Lamb** are not common. In a man, 38 years of age, there appeared a bulging of the left eye six months after an injury to the head. The condition as first described had been going on for three and a half years. Pain began ten months after the swelling, and the vision failed. When he was seen by the author the eye protruded 9 mm. in front of the right, vision was 20/100, and a firm tumour could be felt above and to the outer side of the eye. A modified Krönlein operation exposed a cystic tumour containing a thick mahogany-brown fluid, with yellowish glistening particles believed to be cholesterine crystals derived from the degeneration of an old subperiosteal blood collection. The cyst contents were evacuated and the cavity was packed and drained. There was recovery with good vision and disappearance of the proptosis. A. J. BALLANTYNE.

(6) **Bietti, A. (Siena). — Metastatic endothelial sarcoma in the inferior rectus muscle. (Metastatisches endotheliales Sarkom in Musc. rectus inferior.)** *Klin. Monatsbl. f. Augenheilk.*, April-May, 1915.

(6) Metastatic growths in the extra-ocular muscles are rare. **Bietti** records the following case. A man, 65 years of age, had complained of pain in the lumbar region for three years. For two months there had been bilateral exophthalmos and paresis of the left facial nerve. Vision was 5/20 R. and 5/15 L. There was slight limitation of movement in the left eye, especially out and down. Weakness of the right arm and leg developed. At a later stage the exophthalmos diminished in the right eye but increased in the left. Before death there were recognizable tumour masses in the thoracic and abdominal walls. Post-mortem there was found to be a large retroperitoneal growth in the neighbourhood of the lumbar spinal column. The brain contained a number of foci which were the seat of haemorrhage. There was a nodule in the left inferior rectus muscle, and another in the genu of the facial nerve. Other metastases were found in the thyroid gland, the left kidney and suprarenal, the posterior mediastinal and other glands, and in the psoas and quadratus lumborum muscles. The right kidney and suprarenal were involved in the retroperitoneal mass. Bietti considers the tumour to be an endothelioma, probably originating in the suprarenal capsule. A. J. BALLANTYNE.

(7) **Capron, F. P. (Providence, R. I.).—Multiple melanotic nevi of conjunctiva, with malignant invasion of the corneal limbus.** *Trans. Amer. Ophthal. Soc.*, Vol. XIV, Part 1, 1915, p. 322.

(7) A woman, aged 41 years, consulted **Capron** in 1911. Some brownish deposits on the palpebral and ocular conjunctiva of one eye then noticed were stated to have been present for eight years and to have caused no trouble. A year later, a German ophthalmic surgeon removed a tumour ($\frac{3}{4}$ inch by $\frac{1}{3}$ inch) from the ocular conjunctiva of the affected eye, and described it as "a strongly pigmented melanosarcoma, rich in cells." Towards the end of 1914, the margin of the cornea became superficially ulcerated at several points, and when the ulcerations had healed, pigmented spots appeared *in situ*. The eye was removed in 1915, and radium was successfully applied to a couple of small pigmented spots that had been left. Pathologically, the growths could scarcely be said to invade the eyeball, except quite superficially near the limbus, where they had commenced to attack the corneal stroma.

S. S.

(8) **Dernehl, P. H. (Milwaukee).—Carcinoma of the caruncle with report of a case.** *Ophthalmology*, October, 1915.

(8) Up till 1904 Saemisch was able to find records of five cases of carcinoma of the caruncle which he regarded as authentic. Since that date two further cases have been reported, one of which is somewhat uncertain. **Dernehl** here puts another case on record. The patient was a man of 56. Both caruncles were affected. A macroscopic and two microscopic illustrations are given.

A. J. BALLANTYNE.

(9) **Birch-Hirschfeld, A. (Königsberg).—A contribution to the study of mixed tumours of the lacrymal gland. (Zur Kenntniss der Mischtumoren der Tränendrüse.)** *Arch. f. Ophthal.*, Vol. XC, 1915.

(9) **Birch-Hirschfeld** describes a case of this kind in a man, 57 years of age, who for four years had observed the protrusion of one eye. There was marked displacement of the globe forwards and downwards, total absence of movement upwards and outwards, diminution of vision, hypermetropic astigmatism, and slight hyperaemia of the optic disc. He removed the tumour by Krönlein's operation. After a few months the position of the eye, its movement, and vision were completely restored, while the astigmatism caused by the pressure of the growth on the globe had disappeared; six years after the operation there was no sign of recurrence of the tumour or metastasis.

The new growth was examined microscopically; and its appearances, illustrated by two photographs and two coloured drawings, are described in detail.

A study of this case led the author to make a critical survey of similar cases, so far as the description of the different writers justified, in his opinion, their inclusion in this class. He collected

75 cases from the literature to which he had access, and the result of this review is embodied in the following conclusions:

1. A considerable number of the new growths found in the lacrymal gland and its immediate neighbourhood, and described under a great variety of names, may be grouped together in one class under the general term of "mixed tumours."

Birch-Hirschfeld comments at the outset of his paper on the frequent difficulty, or even impossibility, of determining the exact point of origin of these new growths, and hence believes that many cases have been recorded as tumours of the lacrymal gland which had no connection whatever with it; while others (true cases) have been reported merely as tumours of the orbit.

2. Histologically, these tumours are distinguished by their very complex structure. They contain cells of epithelial character, arranged in the form of glandular lumina, or reticular bands, or solid processes. Morphologically, these cells are in parts absolutely identical with true epithelium: a basement membrane, typical intercellular bridges, and sometimes, too, signs of cornification can be observed. The variability in the relation of these parenchyma cells to the surrounding stroma, which at one time shows myxomatous or hyaline degeneration, and at another contains islands of cartilage, produces a picture that in many places closely resembles an endothelioma, in others typical cylindroma, in other parts, again, adeno- or chondro-myxoma.

3. In the writer's opinion, the view of the epithelial character of the parenchyma is a more probable one than that of their endothelial origin, and he has been led to this conclusion in great measure by the study of mixed tumours of the salivary glands, to which lacrymal growths bear a very close resemblance.

It is this complex structure, with the varying arrangement and shape of the cells, the changes in the stroma, and the variation in the relative preponderance of cells or stroma, that has given rise to the great diversity in the reports of cases by different writers, and to the bewildering confusion in the terminology of these growths. The question of the origin of the cells is one on which there is a great difference of opinion, a similar difference being found among pathologists with regard to tumours of the salivary glands. It may be noted that in his "Pathology of the Eye," Parsons distinctly favours the view of the endothelial origin of the parenchyma, and regards these neoplasms as almost identical with the mixed growths of the salivary glands, which are generally held to be endothelial. He pertinently points to the occurrence of cartilage in the tumours as difficult to explain on the theory of an epiblastic origin. Birch-Hirschfeld, however, as stated, takes the opposite view, and, according to him, there is, on the Continent at least, a considerable weight of opinion in favour of their epithelial character.

4. Clinically, the mixed tumours of the lacrymal gland are at first of very slow growth; but they may suddenly take on a much more rapid development and become malignant, inasmuch as they may lead to local recurrence and the formation of metastatic growths.

5. The early and complete removal of the tumour is therefore indicated, and this should be carried out as far as possible by blunt dissection.

6. As regards the origin of these mixed tumours in the lacrymal and salivary glands, it is very probable that they are due to a displacement of embryonic tissue through some disturbance in the process of development (possibly in the third month of foetal life, when—in the case of the lacrymal gland—the embryonic cells come into relation with the primitive cartilage of the frontal bone).

THOMAS SNOWBALL.

(10) **Toulant, F.—A case of metastatic carcinoma of the iris. (Un cas de carcinome métastatique de l'iris.)** *Arch. d'Ophtal.*, January-February, 1916.

(10) **Toulant** adds another case of metastatic carcinoma of the iris to the few already recorded. In this case the affection of the iris was bilateral and followed removal of the breast for carcinoma in a woman of 31. In addition to the lesions of the iris there was a general recurrence in the skin of the thorax. The nodules in the iris made their first appearance as small yellowish swellings and slowly coalesced without much inflammatory reaction. As the patient left Paris after a stay of three months the author was unable to follow up the final result.

The only other case recorded is said to be one of Proctor's (*Arch. of Ophthal.*, 1907) in which a pathological examination was made by Verhoeff. A bibliography accompanies the paper.

E. E. H.

(11) **Casolino, L.—Lympho-sarcoma of the bulbar conjunctiva. (Di un linfo-sarcoma della congiuntiva bulbare.)** *Arch. di Ottalm.*, July, 1916.

(11) **Casolino** records a case of this rare affection in a patient of 55 years. Four months previously she had attended the Clinic with a tumour occupying the superior and internal part of the conjunctival fornix. The movements of the globe were much restricted, and there was a slight amount of exophthalmos. Wassermann reaction was positive, and the tumour disappeared after treatment with mercurial injections. Four months later the patient returned with a growth on the outer part of the same eye between the equator and the limbus. It was the size of a large bean, of a yellowish-red colour, with a rough surface containing a network of vessels. In

view of the previous history, a further mercurial treatment was tried, but without effect. The tumour was then removed. Two months later it recurred, and the patient declined further operation. Casolino gives a careful account of the microscopical anatomy of the specimen. Two plates accompany the paper.

E. E. H.

(12) **Lamb, H. D. and Hardy, W. F.—A case of lipodermoid of the bulbar conjunctiva with accompanying congenital defects.** *Amer. Jl. Ophthal.*, November, 1916.

(12) **Lamb** and **Hardy** describe a case of lipodermoid of the conjunctiva in a boy aged 10 years, associated with congenital defects of the eye itself, iris coloboma, and remains of pupillary membrane; of the skull, antero-lateral fontanelle due to an unclosed pterion; and of the genitalia, hypospadias, undescended left testicle, fat pads over the symphysis and abdomen, all of which recall the condition of hermaphroditism.

"The (left) eye was seen on its temporal side to present a large flat triangular growth. This extended from 3 mm. inward from the periphery of the cornea outwards to the outer angle of the eyelids and downward to the lower third of the lower fornix; backward hugging the globe and ever widening, the tumour extended to beyond the globe, where it could no longer be followed. The colour of the growth was reddish, the consistency rather soft; the overlying conjunctiva was quite adherent, and the mass but little movable over the underlying eyeball." Vision in this eye was only equal to fingers at five feet. The eyeball movements were good. The growth was dissected off the cornea and sclera but as it became united with the orbital fat the dissection was not continued farther.

Microscopically, the tumour was a lipodermoid. The authors point out that the chief interest of the case lies in the fact that dermoid growths have been observed with much the greater frequency in females, and here, nominally, in a male, the congenital anomalies of the genitalia cause the case strongly to resemble an hermaphrodite.

ERNEST THOMSON.

(13) **Argãnaraz and Belgeri.—A case of leuco-sarcoma of the iris.** (**Un caso de leuco-sarcomo del iris.**) *Boletin de la Sociedad de Oftalmologia de Buenos Aires*, Vol. IV, 1917.

(13) The authors record an example of the rare condition leuco-sarcoma of the iris, which was under observation clinically for a considerable time by various surgeons in the Argentine, as the patient refused operative interference for some years. The tumour occurred in a woman, aged 28, who gave the following history: when aged 17 she received a severe injury to the right side of the forehead and right eyebrow. Six months later she noticed floaters before the eye and

gradual diminution of sight. She consulted an oculist who advised excision of the globe, which advice was supported shortly afterwards by Lagleyze. Six years later glaucoma supervened and she was seen again, but still refused operation. She fell into Belgeri's hands in 1915, and at last consented to have the eye excised.

The histological features were as follows: the tumour formed a round lump stretching backwards from the cornea, about 1 centimetre in diameter in all directions. The sarcoma cells had invaded the substance of the cornea, had destroyed practically the whole of the iris and the anterior portion of the ciliary body. The posterior part of the ciliary body was atrophied, as was also the choroid. The retina was detached and infiltrated with inflammatory cells. The tumour itself was composed of oval and fusiform cells with large nuclei and sparse protoplasm. The cells contained no pigment. The tumour was abundantly supplied with vessels and was of the perithelial angio-sarcomatous type.

The remainder of the paper consists of a summary of previously reported examples of this rare condition. A good illustration of the macroscopic features of the tumour *in situ* is appended.

R. R. JAMES.

(14) **Lawson, Arnold (London).—Case of recurrent glioma of the retina.** *Proc. Royal Soc. of Medicine: Sec. of Ophthal.*, February, 1917.

(14) The left eye of a child, aged 3½ years, was removed for glioma. Examination of the enucleated eyeball showed that there was a large scleral staphyloma in front, and that the thinned sclera as well as the proximal part of the cut optic nerve was infiltrated with glioma cells. In a few months the orbital contents were exenterated, on account of a recurrence of the growth in the orbital cellular tissue. Recurrence took place, however, in a few weeks, and this was treated by inserting a large dose of radium into the growth, and leaving it in place for four hours and a half. Free sloughing followed the application, but at the end of about six weeks all semblance of growth had disappeared.

Three months later the child was readmitted with a soft fluctuating swelling in the orbit, from which a considerable quantity of pus and pultaceous material was evacuated by incision. About a fortnight later an attempt was made to clear out the cavity with a view to using radium again. Very free haemorrhage attended the operation, and it was found that the orbital bones were eroded, and that the antrum was filled with a grumous growth. The operation was followed by recurrent haemorrhage lasting for two or three days. From this time onward the gliomatous mass grew with extraordinary rapidity. It spread over the parotid region, down into the neck, forwards through the skin, and backwards into the mouth.

The child's general health, nevertheless, remained excellent until about three weeks before death, when rapid emaciation set in. Death took place about three months after admission into hospital with the second recurrence. The growth, after death, had a circumference of 16¾ inches, and a vertical diameter of 12½ inches. It weighed 43 ounces. Post-mortem examination showed that the tumour had penetrated through the sphenoidal fissure, and that the under surface of the temporal lobe was flattened by a large subdural mass, which had pushed back the anterior portion of the temporo-sphenoidal lobe. The olfactory lobe on the same side was flattened. The growth had extensively invaded the anterior fossa of the skull on both sides. Neither optic nerve was affected.

The outstanding features of the case are stated as follows. (1) The failure of radium treatment. (2) The purely local nature of the recurrence, which was practically a continuation of the original growth outside the globe. (3) The extremely rapid growth of the tumour when once it had been opened up, and after attempts had been made to clear it away. (4) The total absence of true metastases and the complete freedom from involvement of structures such as the cerebrum, which, though covered by the meninges, were otherwise in immediate contact with the growth. (5) The excellent general condition of the patient, whose health was not materially affected until the protrusion of the growth into the mouth set up acute septic absorption from which the child died.

S. S.

(15) **Clapp, C. A. (Baltimore).—A case of melano-sarcoma of the choroid which was negative to transillumination.** *Amer. Jl. Ophthal.*, March, 1917.

(15) The case related by **Clapp** illustrates the difficulty of diagnosis which may occur in some tumour cases. There was a cystic detachment of the retina and normal tension with no dullness on transillumination. This last feature was so marked that when the case was shown at a society meeting one of the members present remarked on the value of transillumination without which the eye might have been sacrificed. That it ought to have been sacrificed appears in the sequel, for the patient eventually presented glaucoma symptoms and the eye was removed. The patient died a little more than a year after his first appearance at consultation and metastases were found in the liver. The ocular growth proved to be a melanotic sarcoma. The author's explanation of the failure of transillumination is doubtless the correct one, namely, that the light did not get far enough back to catch the tumour, but did catch the detachment which lay in front of the growth.

ERNEST THOMSON.

(16) **Wright, Hal R. (Columbus).—A rare intra-ocular tumour.** *Ophthal. Record,* July, 1917.

(16) **Wright** describes and fully illustrates an exceptionally rare form of intra-ocular tumour. The eye was removed for chronic glaucoma following several subacute attacks during the preceding eighteen months. Six months later a tumour mass was removed from the orbit. It apparently had no attachments to the orbital walls, but it was attached by a pedicle to the apex of the orbit. This growth presented the same cellular structure as the growth discovered in the eye when it was cut, and was evidently a recurrence. There was no history pointing to the presence of a primary growth elsewhere in the body. The intra-ocular growth involved the choroid, the anterior 7 mm. of which was normal, whilst posteriorly it gradually became thicker and over the papilla it measured 4 mm. This thickening was caused by an infiltration and new growth of cells of a peculiar type and arrangement. The cells consisted of columnar epithelium distinctly tubular in arrangement with many cyst formations, and in these cysts were numerous papillomatous projections of connective tissue covered by columnar epithelium. It was regarded as a papillary cyst adenoma usually classified under the head of non-malignant tumours and generally found in the ovaries, breast, and uterus.

J. JAMESON EVANS.

(17) **Jackson, Edward (Denver) and Finnoff, William C. (Denver). Sarcoma of the choroid with secondary changes.** *Trans. Amer. Ophthal. Soc.*, Vol. XV (1917), p. 194.

(17) In the case by **Jackson** and **Finnoff** the sight was affected for over fourteen years, and the eye was not removed until two and one-half years after glaucomatous symptoms had made their appearance. The medical men previously consulted had recognized a detachment of the retina, but there was a history of indirect injury. Eighteen months before the eye was enucleated a band-like opacity of the cornea was observed. The pathological diagnosis was spindle-cell melano-sarcoma of the choroid with metastasis through the globe into the conjunctiva and orbital tissue. Mild panophthalmitis was also present, with a peripheral annular infiltrate of the cornea. The lens was cataractous, and there were evidences of secondary glaucoma following a choroidal sarcoma.

S. S.

(18) **Girgis, Abdel Messih (Assiut).—A rare case of epithelioma of the lid in a child of 5 years of age.** *Ophthal. Soc. of Egypt, Bull.*, 1917, p. 89.

(18) The growth of one lower eyelid in a young child, described as "epithelioma" by **Girgis**, and associated with "small warty papilloma of the face and nose," appears to have been one of the

manifestations of the rare affection xeroderma pigmentosum (Kaposi's disease), a view taken by Lt.-Col. Phillips, R.A.M.C., who discussed the case. Be that as it may, the growth, which covered both lids of the right eye and extended over the upper part of the cheek, is described as hard, fungating, and ulcerated, with cauliflower excrescences. Measurements were: length, 4 cm.; breadth, 3 cm.; and thickness, 2 cm. The tumour, together with the lower eyelid, was removed, and with it some of the ocular conjunctiva and the skin of the cheek and the subcutaneous tissue and fat down to the malar bone. A Thiersch's flap from the thigh was used and the parts were sutured. The child was alive sixteen months after operation.

S. S.

(19) **Fuchs, Ernst (Vienna).—On pigmentation, melanoma, and sarcoma of the choroid. (Ueber Pigmentirung, Melanom und Sarkom der Aderhaut.)** *Arch. f. Ophthal.*, Vol. XCIV, Pt. I, 1917.

(19) **Fuchs** here discusses certain special conditions and varieties of shape found among the numerous cases of sarcoma of the uveal tract which he submitted to anatomical examination, but commences his article with the consideration of the normal pigmentation of the choroid and of melanoma for the sake of comparison with some cases of sarcoma in its initial stage.

The pigmentation in the pigment epithelium and stroma of the choroid was estimated separately according to a colour-scale and Fuchs found that as regards the pigment epithelium the tint of it, as a whole, varies within wide limits, while that of the pigment particles does not: the tint of the retinal epithelium depends mainly on the number of the fuscin needles in the individual cell, The colour of the choroid, as a whole, also varies more than that of the individual pigment granules. It depends on the number of the chromatophores, but more especially on the amount of pigment in these cells. The amount of pigment influences the size and shape of the chromatophores (not so with the retinal epithelium): both in physiological and pathological conditions (melanoma) the cells tend to assume a more globular shape according to the increase in the pigment.

The ectodermal and the mesodermal pigmentation are quite independent of each other.

Melanoma of the choroid (Fuchs disapproves of the synonym, *Naevus*) is a circumscribed mass of chromatophores.

Such tumours are very rare and are met only accidentally on anatomical examination; they are found in choroids that are well, or deeply, pigmented and occupy the posterior part of the fundus. They are small growths (the largest in six recorded cases being only

2 mm. in diameter), the area of which is greater on their outer side than on their inner: the choriocapillaris is usually not involved. The cells composing them are increased in number, but more in size; their outline is either still distinguishable or obscured by the pigment.

Melanoma is diagnosed as such when all the cells in it resemble chromatophores. Fuchs finds no evidence to indicate that a melanoma may develop into melanosarcoma, and holds that the supposed analogy of origin of melanosarcoma from naevi in the iris proves nothing, for in the iris naevi are of common occurrence while sarcoma is rare.

He refers, in passing, to three cases of melanoma in the ciliary body.

In connection with *sarcoma of the choroid* the author discusses very small sarcomata, pigment spots in the fundus in such cases, types of growth, and intra-ocular pressure.

He gives a list of fifteen cases of very small sarcomata, where the choroid at the site of the tumour did not exceed 1 mm. in thickness. These new growths were usually found in the posterior section of the choroid, in the suprachoroidea and layer of large and medium vessels. As regards the three cell types (chromatophores, endothelial and vascular cells) found in these layers the pigmentation of the majority of these, even the smallest sarcomata, pointed to the chromatophores as their usual starting point There is as yet no certain means of absolutely excluding the other two types of cells.

The author pronounces his cases as true sarcoma from their histological appearances only, the sarcoma spindle cells with large nucleus and nucleoli being quite different from chromatophores and in the smallest growths exactly similar to those in the fully developed tumour. The fact that the majority of these tiny sarcomata are spindle celled and pigmented contradicts the theory that the early form of sarcoma cells is round and non-pigmented; it indicates rather that these tumours are histologically of the same structure at their commencement as they show in their later stages.

Pigment spots are often seen in the area of the retina overlying the sarcoma, or in its neighbourhood, or at some distance from it. They arise most frequently from the clumping of phagocytes containing the pigment of disintegrated retinal epithelium, which lie on the pigment epithelium, on the outer side of the retina or in this layer. Less frequently they are due to the migration of pigment epithelium cells into the retina, rarely to the tumour cells or to phagocytes carrying haematogenous pigment.

The variation in the form of growth of sarcomata is shown by a number of illustrations and cases, in which the author treats of the relations of the tumour to the rupture of the lamina vitrea (on which its shape primarily depends) and to the retina both before

and after its detachment. In the case of the retina he discusses those cases where this layer becomes split, usually at the internuclear layer, at the point where only the apex of the tumour breaks through, the retina being elsewhere detached, and offers an explanation of this condition.

As regards the forms of growth that are observed where the rupture of the lamina vitrea occurs very late, Fuchs deals at length with the circumpapillary and flat sarcoma types, and in the case of the latter with the causes underlying their special development.

With regard to intra-ocular tension, he refers to the changes in the preglaucomatous stage—detachment of the retina or choroid and swelling of the papilla—and gives a survey of the conditions found in a series of nineteen cases of well-developed sarcoma without any rise of tension and in six cases with hypotony. In the great majority of the former series there was a detachment of the retina. As to the origin of the subretinal fluid he discusses the pros and cons of the two theories advanced—from the choroid or from the tumour. He holds that this question is not yet solved, although he personally inclines to the former.

THOS. SNOWBALL.

(20) **Bane, William C. (Denver).—Cyst of dural sheath of optic nerve.** *Amer. Jl. Ophthal.*, January, 1918.

(20) **Bane** reports a case of cyst of the dural sheath in a lad of 8 years. The eye was blind, and protruded 5 mm. forward, downward, and inward beyond the plane of the other eye. Optic disc atrophic. There was 6D. of hypermetropia in the affected eye as compared with half that amount present three years previously. X-ray examination negative. A vertical incision, about 30 mm. in length, was made through the conjunctiva 5 mm. external to the cornea and the external rectus was divided. Dissection backwards close to the globe soon brought to light a cystic mass (12 by 18 mm.) firmly attached to the sclera around the entrance of the optic nerve and enveloping the nerve for about 18 mm. towards the optic foramen. The cyst was accidently ruptured. The optic nerve was exposed and severed close to the globe, and a section of the nerve together with the cyst wall was removed.

On leaving off the pad, which had been used to shield the eye, a small peripheral ulcer of the cornea, which healed in six days, developed. It was noted that the severing of the nerve did not appear to interfere with the blood supply of the retina.

S. S.

(21) **Posey, William Campbell (Philadelphia).—Report of four cases of orbital tumours successfully removed, with preservation of vision, through an orbital incision along the external orbital rim.** *Trans. Amer. Ophthal. Soc.*, Vol. XVI (1918), p. 192.

(21) **Posey** reports three instances in which an orbital tumour of some size (sarcoma, fibroma, dermoid cyst) was removed by an incision made along the outer rim of the orbit. In a fourth case (adenoma) the incision was made directly over the mass which could be felt, while in the others the position of the tumours was uncertain, although the clinical signs suggested that the growth was located in the posterior part of the orbit.

The initial incision was so placed that, if found desirable, the wall of the orbit might be resected after the manner of Krönlein; but fortunately in none of the cases was this found to be necessary. The author devotes a large part of his communication to describing the modification of the Krönlein method by Magitot and Landrieu, of Paris, although he has not performed the modified operation upon the living subject.

S. S.

(22) **Davis, A. Edward (New York).—Report of two orbital tumours.** *Trans. Amer. Ophthal. Soc.*, Vol. XV (1918), p. 199.

(22) **Davis's** first case was one of endothelioma treated by removal and by a later resection of 1½ inches of the frontal bone. The second case was one of myxoglioma of the optic nerve (intradural) which followed the removal seven years previously of an intradural sarcoma of the optic nerve by Krönlein's operation.

S. S.

(23) **Friedenwald, Harry (Baltimore). — Ophthalmoscopic conditions simulating sarcoma of the choroid.** *Trans. Amer. Ophthal. Soc.*, Vol. XVI (1918), p. 208.

(23) **Friedenwald's'** first case was in a patient of 18 years, whose fundus showed a bluish-grey mass, the summit of which could be seen with a convex glass of 12D. The tuberculin test was negative. After a trial of radium the eye was removed. Examination of the growth by several pathologists failed to settle the question of its essential nature, so that the author concludes that it must be described as a choroidal granuloma of obscure origin. The second case was in a lad of 12 years, the sight of whose right eye had been lost. The general health was good. The Wassermann and the von Pirquet tests yielded negative results. After enucleation of the eye the growth was found to measure 0.9 cm. by 0.6 cm., and to be in the nature of those cases described by Coats as "retinitis with massive exudation." The cases described by Friedenwald go to show the difficulty or even the impossibility of making a definite diagnosis in some instances of a neoplasm of the fundus solely on the ophthalmoscopic appearances.

S. S.

METHODS OF EXAMINATION

Röntgen Rays

(1) **Villasevãglios, G. (Naples).—Röntgen rays in the diagnosis of ocular disease. (I raggi Röntgen nella diagnosi delle malattie oculari.)** *Arch. di Ottal.*, 9, 10, 11, 1916.

(1) **Villasevãglios** occupies two whole numbers and part of a third of the journal with his article, or rather book, on Röntgen rays in the diagnosis of ocular maladies. The first part occupies some 45 pages and deals with the theory and technique of Röntgen ray work. This makes no pretence to be exhaustive but serves as a useful introduction to the surgeon who has had no practical knowledge of the subject. The second part, which, with a series of plates and a bibliography, occupies 100 pages, deals with the practical use of the rays in the diagnosis of ocular disease and is divided into five chapters. The first chapter treats of the intracranial processes and anomalies of the shape of the skull which may cause optic atrophy, with special reference to hypophyseal tumours and oxycephaly. This chapter contains a series of useful diagrams illustrating the alterations that take place in the shape and size of the sella Turcica and sphenoidal sinus in acromegaly. The second chapter describes the various lesions of the orbital wall and base of the skull that cause ocular change (optic atrophy, muscular paralysis, etc.). The third chapter takes up anomalies of form of the orbital walls due to destructive inflammatory process, to hyperostosis or tumour formation. The fourth chapter deals with the radiographic examination of the accessory sinuses. The author is of opinion that stereoscopic examination with the screen is the most serviceable method to employ in the examination of the sinuses. The final chapter deals with the localization of foreign bodies. In this chapter all the well known methods of localization receive mention. Villasevãglios himself considers that stereoscopic methods, as first employed by J. Mackenzie Davidson, yield the most satisfactory results.

The work concludes with an illustrated description of eight cases from the author's own observations typical of the different conditions he has described in the previous chapters.

Although the paper contains no novelty it should serve as a useful guide to the ophthalmic surgeon in estimating the value of radiography in ophthalmology.

E. E. H.

(2) **Van der Hoeve (Groningen).—Röntgen ray examination in cases of tumours of the orbit. (Röntgenuntersuchung bei Tumoren der Orbita.)** *Zeitschr. f. Augenheilk.*, November, 1917.

(2) **Van der Hoeve** thinks that the X-ray examination is apt to be neglected in cases of orbital tumour. This is a pity, for a good radiogram will often afford valuable information regarding the nature of the growth, and its relations to surrounding structures. The deepest shadows are thrown by the osteomata, and more especially when they are eburnized. The more recent work of Lagrange and Birsch-Hirschfeld teaches that the older opinion which recommended a conservative treatment of osteomata is dangerous, for the majority of them if left *in situ* lead to death, as, for example, frontal sinus osteomata. The value of a radiogram in these cases lies in the information it may give as to the point of origin of the bony growth, and the best way of attacking it. Most of the osteomata found in the orbit arise from one of the nasal sinuses. By operating upon the sinus it is generally much easier to remove the tumour than it would be by the orbital route. The Röntgen rays may prove useful in soft growths in the orbit. Van der Hoeve describes a case of this character. The tumour was removed by Rollet's method in preference to Krönlein's. Rollet points out that the contents of the orbit are not in direct contact with the periosteum, but are separated by an aponeurosis. There is a definite space between this aponeurosis and the periosteum which the anatomists have so far failed to describe. At Rollet's request Professor Laturget has investigated the space. Rollet finds that tumours often develop in it which may compress the muscle cone without implicating the structures which form it. The presence of tumours in this space, which contains no blood-vessels, favours an operation for extirpation.

The paper contains examples of Röntgen photographs, and of a section of one of the tumours removed.

T. HARRISON BUTLER.

BOOK NOTICES

The Medical Annual, 1918. Liverpool: John Wright & Sons, Ltd. Price 10/- net.

The space allotted to eye disease in this valuable summary of the year's work is again given to A. Hugh Thompson. The first three pages deal with general therapeutics, and give abstracts of recent papers on radium, thyroid, pilocarpine sweats, the treatment of hypopyon keratitis, subconjunctival injections, and the use of heat short of cauterization. A brief account of the recent literature on concussion injuries of the eye and visual part of the brain follows, in which mention of the work of Collins, Lister, Gordon Holmes, Riddoch and Kinnier Wilson (spelt Kinnear) is made. This is followed by an abstract of Whiting and Goulden's paper

on magnet extraction, accompanied by reproductions of the plates published in this Journal. The final article is on arteriosclerotic disease of the retina, with a coloured plate taken from Foster Moore's paper read at the Royal Society of Medicine. Two more coloured plates are reproduced, one from Treacher Collins' paper on subchoroidal haemorrhage, and the other from Pringle's paper in the *British Journal of Surgery* on haemorrhage into the sheath of the optic nerve.

E. E. H.

Medical Research Committee. Reports of the Special Committee upon the Standardisation of Pathological Methods. London: His Majesty's Stationery Office. 1918. Price 1s. net.

So important are venereal diseases in the aetiology of affections of the eye that no apology need be made for noticing at some length the two reports upon the laboratory diagnosis of gonococcal infections and the methods for the detection of spirochaetes contained in this illustrated pamphlet, the work of a special committee (appointed by the Medical Research Committee) consisting of Lieut.-Col. J. G. Adami, F.R.S., Major F. W. Andrews, F.R.S., and Professor William Bulloch, F.R.S., together with Col. L. W. Harrison, D.S.O.

As regards gonorrhoea, the stage has not yet been reached when a diagnosis can be made with certainty by bacteriological methods alone, although as adjuncts they are enhanced to a remarkable degree when the diagnosis is entrusted to a thoroughly trained bacteriologist employing the best methods. In acute gonorrhoea (whether of the genito-urinary passages or of the conjunctiva) a positive diagnosis may be justified from microscopical examination of films alone, the proper technique being employed and the examination being made by a competent observer. That is not the case in chronic gonorrhoea, which more particularly interests the ophthalmic surgeon. Under such circumstances, smears should be made from any urethral discharge that may be present or be obtained after massage of the prostate, seminal vesicles, and Cowper's glands, or, failing that, from any deposit that may be got after centrifugalization of the first ounce of urine passed. In females material for the purpose should be collected directly from the urethra, the cervical canal, or Bartholin's glands. Merely to secure a smear from the vulva (except in the vulvo-vaginitis of children) is of no value in demonstrating the absence of gonorrhoeal infection. Films, however obtained, should be thin and evenly distributed, and not dried too rapidly over the flame. The committee recommends that W. Jensen's modification of Gram's method should be used to the exclusion of all others.

The original method of Gram is replete with possibilities of error. Briefly, in Jensen's modification the anilin water is discarded, the concentration of the iodine solution is increased, and weak neutral red is employed as the counter-stain. The exact technique will be found fully described in the *Reports* and elsewhere. It should be noted that Gram-positive organisms lose that characteristic when digested by leucocytes, and that in certain cases where satisfactory films are difficult to obtain, as in chronic gonorrhoea, the gonococci may appear to be Gram-positive. Apart from media which contain human blood or animal blood serum, the best media suited for the routine cultivation of the gonococcus are: (1) Thomson's human plasma-glucose agar; (2) Cole's tryptic-blood agar; and (3) Gordon and Hines's trypsinised pea-extract agar, the preparation of all of which is fully described in the *Reports*. Focal gonococcal reactions, as by the inoculation of a suitable dose of a suspension of dead gonococci, should be adopted with caution, since there is a danger of lighting up infections with serious results. As to the complement fixation test for gonorrhoea (little employed in Great Britain), while it cannot replace other methods of diagnosis, it may sometimes be the only laboratory means by which a gonococcal infection can be recognized. It is most likely to be of value in cases of metastatic infection, where direct demonstration of the gonococcus may be difficult or impossible. The committee does not recommend any one standard method of complement fixation, but describes the plans of Schwartz and McNeil, of Ower, of Kolmer, and of David Thomson.

Every localized lesion upon the organs of generation should be examined with a view to the detection of spirochaetes. The finding of the organism affords the earliest means of diagnosing syphilis. The importance of this lies in the fact that treatment undertaken in the early primary stage is simple, assured, and a matter of weeks, whereas after the infection has become generalized, with the development of a positive Wassermann reaction or of secondary lesions, it is uncertain and a matter of months. If the first examination be negative, it should be repeated upon subsequent occasions. In the case of superficial lesions, say, of the eyelid, fluid expressed from the affected part must be employed for examination, and microscopical diagnosis must be made prior to arsenical treatment. Stained films—once employed almost exclusively for diagnostic purposes—have now been largely replaced by other methods for the detection of the *Spironema pallidum*, although it must be admitted that when results obtained by staining are positive they cannot be questioned. On the other hand, the *Spironema* has a notable lack of affinity for most staining reagents, and as a result few may appear when many are really present in the specimen; the organisms become distorted by drying, and

there is an absence of the characteristic movements. In the experience of the committee, the Romanowsky method in one or other of its modifications affords the best results, although Leishman's and Homer Wright's modifications "are not far behind." By these methods *Spironema pallidum* is coloured a rose pink, while other spirochaetes are blue in colour. Among the silver nitrate methods Fontana's modification is well spoken of. But the best way of demonstrating the *S. pallidum* is by the dark-ground condenser, which has the advantage of being of English origin, although in recent years it has been reintroduced from Germany. In this method any microscope suitable for pathological work may be utilized, but it should be provided with a mechanism for adjusting the sub-stage illuminating apparatus. An oil immersion objective is not essential. The most satisfactory electric illuminant is the "Pointolite" lamp made by the Ediswan Company, a tungsten arc in a gas-filled bulb, which gives a light-source of high intensity and small area, and is, in fact, the nearest approximation to a point source of light at present known. For dark-ground illumination of blood or pus the light should be subdued sufficiently by the interposition of a pale-blue colour screen. It then yields an exceedingly good result.

From an appendix by Clifford Dobell, F.R.S., it appears that the correct name of the spirochaete of syphilis is, in full, *Spironema pallidum* (Schaudinn, 1905, Vuillemin, 1905) or, briefly, *Spironema pallidum* Schaudinn. The names *Treponema* and *Microspironema* are synonyms without validity.

S. S.

Malaria and its Treatment. By Capt. A. CECIL ALPORT, R.A.M.C.(T.) late Acting-Major, Officer in charge of Medical Division of the 28th General Hospital and of the 41st General Hospital, Salonika. London: John Bale, Sons & Danielsson, Ltd. 1919.

This book will interest the ophthalmic surgeon, in so far as it is a defence of the system of giving massive doses of quinine for the treatment of malaria. The attitude of the writer will be realized when we understand that he believes it to be quite safe to give from 60 to 120 grains of quinine in 24 hours, and that he speaks with apparent approval of a surgeon who "thinks nothing of giving 100 grains of quinine intravenously and intramuscularly in twelve hours, and following this up with further large doses." On page 128 we learn that 26 patients were treated for 72 days with an average daily dose of 35 grains of quinine. The smallest total dose in the series was 1,330 grains, and the largest, 3,560 grains. Four cases of quinine amblyopia are quoted, and stress is laid on the fact that they all occurred in patients suffering with black water fever. It is stated that the consulting ophthalmologist of the

Salonika Command issued a report which "goes to show that there is little or no change in the acuteness of vision of patients who have recovered from quinine amblyopia." He found the fields of vision to be more or less contracted, and describes pallor of optic discs and narrowing of retinal arteries in a varying degree in all cases. The contraction of the fields of vision appears to have been the most important change noted. The author adds, "As this is probably only temporary, and does not cause the man any inconvenience, or affect his efficiency as a soldier, it appears to me to be quite unjustifiable to withold quinine in black water fever because of the possibility of amblyopia occurring. The condition, however, has modified the quinine dosage I use in these cases."

It will be observed that no mention is here made of that very important symptom, night-blindness, which is so unpleasantly frequent after quinine poisoning of the eyes. We think, too, that Captain Alport has dismissed too lightly the significance of contracted fields, pale discs, and narrowed vessels. His optimistic estimate will not be shared by those who know the literature of quinine poisoning. The reviewer has under his care at the present time a corporal, invalided for other causes, in the consideration of whose case the authorities seem to be totally unaware of any element of quinine poisoning, and yet the stigmata of it are present, and the man's gravest complaint is that he is "so apt to walk into a wall at night." The case is not a solitary one. It is not for the ophthalmic surgeon to dictate to the expert in tropical disease what doses of quinine or of arsenic he shall or shall not give, but it is his duty to keep a jealous eye on the cases in which harm has been done, and to see that both sides of the question are kept in mind by the profession. Captain Alport is an enthusiast, and one must admire him not only for this, but also for the clear, graphic way in which he puts his case. At the same time it is obvious, and to his credit he makes no effort to conceal it, that his method of giving massive doses did not meet with the approbation of all of his colleagues. Possibly he is suffering for being a pioneer; but where enthusiasm has its dangers, fair criticism and the exercise of sober judgment cannot fail to be of value.

R. H. ELLIOT.

An Inquiry into the Medical Curriculum by the Edinburgh Pathological Club. Edinburgh: W. Green & Son, Ltd. 1919.

The Edinburgh Pathological Club carried out during the session 1917-18 an inquiry into the medical curriculum by obtaining for the purpose a number of communications from teachers in the Edinburgh and other schools. These were published by the *Edinburgh Medical Journal* as they were received, and are now collected and reprinted as a separate volume, together with a report upon the

whole subject by the Club. The communications by Mr. E. Treacher Collins and Drs. Freeland Fergus, W. G. Sym, and J. V. Paterson dealing with the teaching of ophthalmology to medical students were noticed among the annotations in our last issue. The report of the Pathological Club makes no special mention of the subject, although it is included in the "outline of proposed curriculum" appended to the report. We are given to understand that the volume is not on sale but that a few copies are still available for distribution and may be obtained on application to the Secretary, Dr. H. M. Traquair, 16, Manor Place, Edinburgh.

S. S.

Transactions of the American Ophthalmological Society. Volume XVI. Philadelphia: American Ophthalmological Society. 1918.

This cloth-bound volume of 412 pages contains an account of the proceedings of the fifty-fourth annual meeting held at New London, Conn., in July, 1918. It is well printed upon good paper, is freely illustrated and includes much that is of interest. Its contents will be noticed in abstract form in these columns.

S. S.

Communications of the Ophthalmic Hospital, Buenos Ayres, No. 1, December, 1918. (**Comunicaciones del Hospital Oftalmológico.**) Buenos Ayres: Sociedad de Beneficencia de la Capital.

We welcome the appearance of a new Spanish publication on ophthalmology, the *Transactions of the Ophthalmic Hospital of Buenos Ayres;* the first number of which is to hand, consisting of a fasciculus of 160 pages. The scope of the publication is to record interesting cases, and the work of men in the Argentine, and at the same time to give in each part a digest of the more important communications which have been made to ophthalmology principally by those at home, but also by those abroad.

We do not gather from the preface either the price of subscription to the work, or how frequently its appearance is to be expected, but as the digest is concerned with publications during the first half of the year, we assume that the *Transactions* will appear at least twice a year.

The fasciculus in question is of about the same size as, and is very similar to, the monthly *Klinische Monatsblätter f. Augenheilkunde;* it is profusely illustrated, paper and printing are very good, and obviously no expense has been spared to make the *Transactions* a success.

Among the contents we notice articles by Wernicke, on Blood Staining of the Cornea; by Moraschi, on Acute Dacryo-adenitis; by Natale, on Tuberculous Periphlebitis of the Retina; by Damel, on Ophthalmoplegia; by Castro, on Spasmus Nutans; by Soriano,

on Megalo-cornea; by Marque, on Pontine Tumours; and by Barrios, on Pulsating Exophthalmos, some of which we hope to abstract for publication in this Journal.

R. R. JAMES.

Medical Research Committee, Statistical Reports. No. 3. An Analysis of 8,670 Ophthalmic Cases treated at a Home Hospital.

This is a report on the ophthalmic work carried out at the 2nd London General Hospital, St. Mark's College, Chelsea, from September, 1914, to the end of 1917, by Major A. W. Ormond, and is mainly statistical. Of the 8,670 cases dealt with, 5,896 were out-patients sent from various military centres and did not differ much from civilian hospital work. Major Ormond states that the Hospital was a spectacle centre for the distribution of glasses ordered elsewhere, but does not include any account of this work in the report.

The notes include 684 men blinded in the war, divided into two main classes. Those who lost their sight by a transversely passing missile, and those whose eyes were destroyed by the bursting of a shell or bomb close to, with penetration of, the globes. Towards the end of the period dealt with in this report the number of bullet wound cases diminished. The reason for this was given to the author by an officer, who said, "Ah, we have learnt to deal with snipers now." The author promises to deal with some of the more interesting cases in a later paper. It is satisfactory to hear that there was only one case of sympathetic ophthalmia, and he recovered vision of 6/9 in the sympathizing eye. The result of magnet extraction of foreign bodies was disappointing, but it is to be noted that only the severe cases were sent home, the less serious ones receiving treatment at the base hospitals in France.

In conclusion, we may draw attention to the following somewhat startling misprint which occurs in a note upon plastic operations: "the number of failures were few, the pediculi (*sic*) being sufficient to sustain the vitality of the graft," etc.

E. E. H.

CORRESPONDENCE.

A NEW FORM OF BI-FOCAL LENS.

To the Editor of THE BRITISH JOURNAL OF OPHTHALMOLOGY.

SIR,—Referring to the suggestion made by Mr. E. E. Henderson, concerning the altered effectivity of spherical lenses when tilted, I

should like to submit the accompanying table in the hope that it may prove interesting.

The results have been calculated to six places of decimals but are expressed in terms of the nearest $\frac{1}{8}$th of a dioptre, showing the altered effectivity of the various powers when tilted through 15°, 20°, and 25°.

I am, Sir,

Yours faithfully,

41, WIGMORE STREET,
LONDON, W.1.
April 3, 1919.

J. R. HOWARD.

THE ALTERED EFFECTIVITY OF A SPHERICAL LENS WHEN ROTATED ABOUT ITS HORIZONTAL MERIDIAN.

Calculated from the formulae

$$D_1 = \frac{D\,2\mu}{2\mu - \sin^2 a} \qquad D_2 = \frac{D_1}{\cos^2 a}$$

Where $\sin^2 15° = ·066977$ | $\cos^2 15° = ·933023$
„ $20° = ·116964$ | „ $20° = ·883036$
„ $25° = ·178591$ | „ $25° = .821409$

Dioptres	15°		20°		25°		
	Sph.	Cyl.	Sph.	Cyl.	Sph.	Cyl.	
1·0	1·0	—	1·0	·12	1·0	·25	Axis 180°
1·5	1·5	·12	1·5	·25	1·5	·37	
2·0	2·0	·12	2·0	·25	2·12	·50	
2·5	2·5	·12	2·62	·37	2·62	·62	
3·0	3·0	·25	3·12	·50	3·25	·75	
3·5	3·62	·25	3·62	·50	3·75	·87	
4·0	4·12	·25	4·12	·50	4·25	1·0	
4·5	4·62	·37	4·62	·62	4·75	1·0	
5·0	5·12	·37	5·25	·62	5·37	1·12	
5·5	5·62	·50	5·75	·75	5·87	1·25	
6·0	6·12	·50	6·25	·87	6·37	1·37	

To the Editor of THE BRITISH JOURNAL OF OPHTHALMOLOGY.

SIR,—I have long been convinced that it is most important that myopes should never rotate their eyes downwards when reading, but that the book should be raised to the level of their eyes as explained on p. 47 of my "Prescribing of Spectacles."

Only last week a myope of −4D. came to me with a detachment of the retina that had occurred the previous day. He had been wearing bifocal lenses. Less than two years ago I had a similar case of −3D. who had a detachment for which also I could assign no cause but that he was wearing bifocal lenses. I feel it my duty to give this warning against bifocals in myopia, though I suppose that I am as enthusiastic as anyone in their praise in cases of hypermetropia.

Surely Mr. Bardsley has been troubling himself over a very simple matter. If bifocal pince-nez are used, every wearer instinctively adjusts them so that his visual lines traverses them normally; and if spectacles are worn, it is a very simple matter to raise the legs a trifle so that the lenses are tilted sufficiently to meet this requirement. As when reading the head is usually inclined 10° to 15° the eyes need not be depressed more than 15° at most.

I am, Sir,

Yours faithfully,

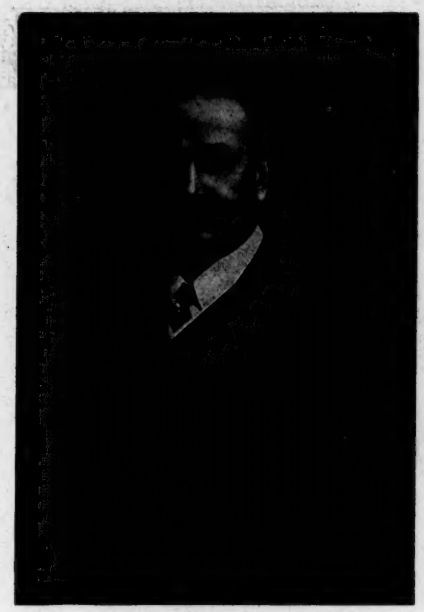
A. S. PERCIVAL.

17, CLAREMONT PLACE,
NEWCASTLE-ON-TYNE.

OBITUARY.

We regret to announce the death, at the age of 62, of Sir James Mackenzie Davidson, of London, one of the foremost authorities in the world on X-rays, especially in their applicability to ophthalmology. Formerly lecturer on ophthalmology in the University of Aberdeen and ophthalmic surgeon to the Royal Infirmary and the Royal Sick Children's Hospital, he came to London in 1897 and devoted special attention to X-ray work. He will be best remembered for his cross-thread method of localizing foreign bodies by means of X-rays, which, of course, has found its greatest application in the war. The devotion which he paid to this branch of his work impaired his vitality, and the world o science is the poorer by the loss of an inventive mind, and humanity

by the withdrawal of a man of singularly generous nature, who never spared himself in doing good. A striking tribute was paid to him at the International Medical Congress in 1913, when it was said that his name would endure as long as X-rays were emitted from a bulb. In 1916 he accepted, without reward or rank, the office of consulting radiologist to the Military Hospitals of the



London District. Davidson was a pioneer in his application of the stereoscopic method to the viewing of X-ray pictures, and of guiding the extraction of a foreign body by means of a telephone probe. His one book, "Localization by X-rays and Stereoscopy" (1916) summed up his life-work, but such was his mental energy that it was hardly in print before he had put out of date some of the methods described by him. In civil life Sir James held the posts of consulting medical officer to the Ray Department of the Royal London Ophthalmic Hospital, and of the Charing Cross Hospital. He is survived by Lady Davidson, who is the sister of Mr. J. M. Henderson, ex-M.P. for West Aberdeenshire, a son, Mr. Colin Davidson, who is Mr. Bonar Law's private secretary, and a daughter, the wife of Dr. Bernard Potter, of London. A memorial service was held on April 7 at All Souls' Church, Langham Place.

It is but fitting that the death at 87 years of the famous scientist Sir William Crookes, O.M., should be noted in these columns. A Londoner, he began his scientific career at the old Royal College of Chemistry, Hanover Square, where he became assistant to the director, Dr. A. W. Hoffmann. He discovered thallium, invented the radiometer, and his electrical researches led up to the modern theory of the electron. He introduced the "Crookes's tube." His connection with the Royal Society was long and distinguished. Elected a Fellow in 1863, the Society awarded him three of the medals at its disposal—a Royal Medal in 1875, the Davy Medal in 1888, and the Copley Medal in 1904; appointed him to deliver the Bakerian Lecture on three occasions; and, finally, chose him as President. While occupying this distinguished position a committee of the Royal Society was appointed to investigate the causation of glassworkers' cataract. Sir William Crookes threw himself enthusiastically into the research, more particularly with the object of discovering some glass which would protect the workmen's eyes from heat and ultra-violet radiations. He prepared a large number of glasses and investigated their properties. The best cut off most of the infra-red and ultra-violet rays while absorbing little of the luminous rays. These are the now familiar "Crookes's glasses."